

B.Sc. Semester - 3 (CBCS) Examination
Oct/Nov - 2022 (OLD COURSE)
CHEMISTRY (CORE)

Time: 2:30 Hours

Marks: 70

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate marks.

Q. 1 (A) Give the difference between BMO & ABMO. [04]

Q. 1 (B) Answer the following (Any Two) [10]

- (1) Explain: sp - hybridization.
- (2) What is eigen function and eigen value. Explain with examples.
- (3) Give any three postulates of wave mechanics.

Q. 2 (A) Answer the following: [04]

- (1) Explain: Lanthanoid contraction.

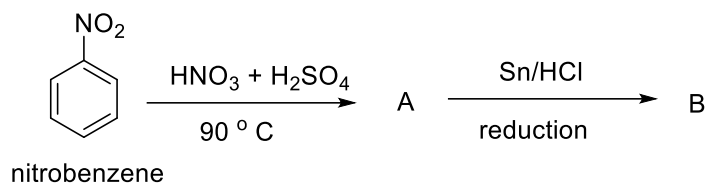
Q. 2 (B) Answer the following (Any Two) [10]

- (1) Give the atomic number, symbol and name of lanthanide elements.
- (2) Complete the following reactions.

(a)

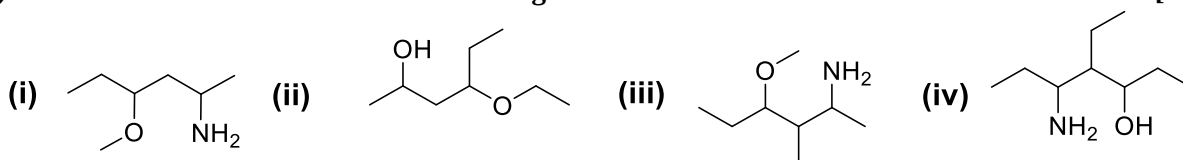


(b)



- (3) Discuss: benzyne mechanism.

Q. 3 (A) Give the IUPAC name of each of following molecules. [04]



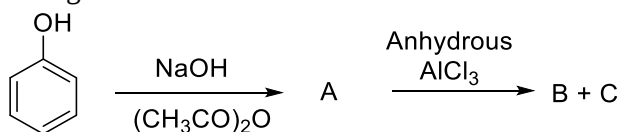
Q. 3 (B) Answer the following (Any Two) [10]

- (1) Write note on: Hinsberg test.
- (2) Give the following synthesis of alcohol;
 - (a) by Grignard reaction.
 - (b) by reduction of aldehyde, ketone, carboxylic acid.
- (3) Explain: factors affecting on acidity of phenol.

Q. 4 (A) Define: phase & component with example. [04]

Q. 4 (B) Answer the following (Any Two) [10]

- (1) Explain: pinacol-pinacolone rearrangement with mechanism and application.
- (2) Complete the following reactions with mechanism.



- (3) Explain: water sulphur by phase diagram.

Q. 5 (A) Give any two applications of Distribution law. [04]

Q. 5 (B) Answer the following (Any Two) [10]

- (1) Explain: Nernst distribution law with limitations.
- (2) Derivation of Raoult's Law.
- (3) Explain: Henry's Law.
